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ABSTRACT

This study focuses on the economic benefits derived by the migrant from migration. The report presents a methodology for computing monetary benefits, an estimate of these benefits, and implications of the findings for public policy. Included are a discussion of domestic migration and public policy, an economic theory of migration, an explanation of the use of multiple regression analysis in obtaining an estimate of the annual earnings differential attributable to migration, the results of the foregoing analysis, and interpretation and policy implications. Among the implications, it is noted that (1) migration out of the South yields higher earnings for all but women, who earn no additional income, and for the college-educated; (2) overall, the larger the city migrated to, the larger the monetary gains; (3) after 5 years, migrant earnings are equal to those of Northern and urban nonmovers of the same education, age, race, and sex; and (4) South-to-North migration is more profitable for non-whites than for whites. Twelve tables are presented. (MJB)

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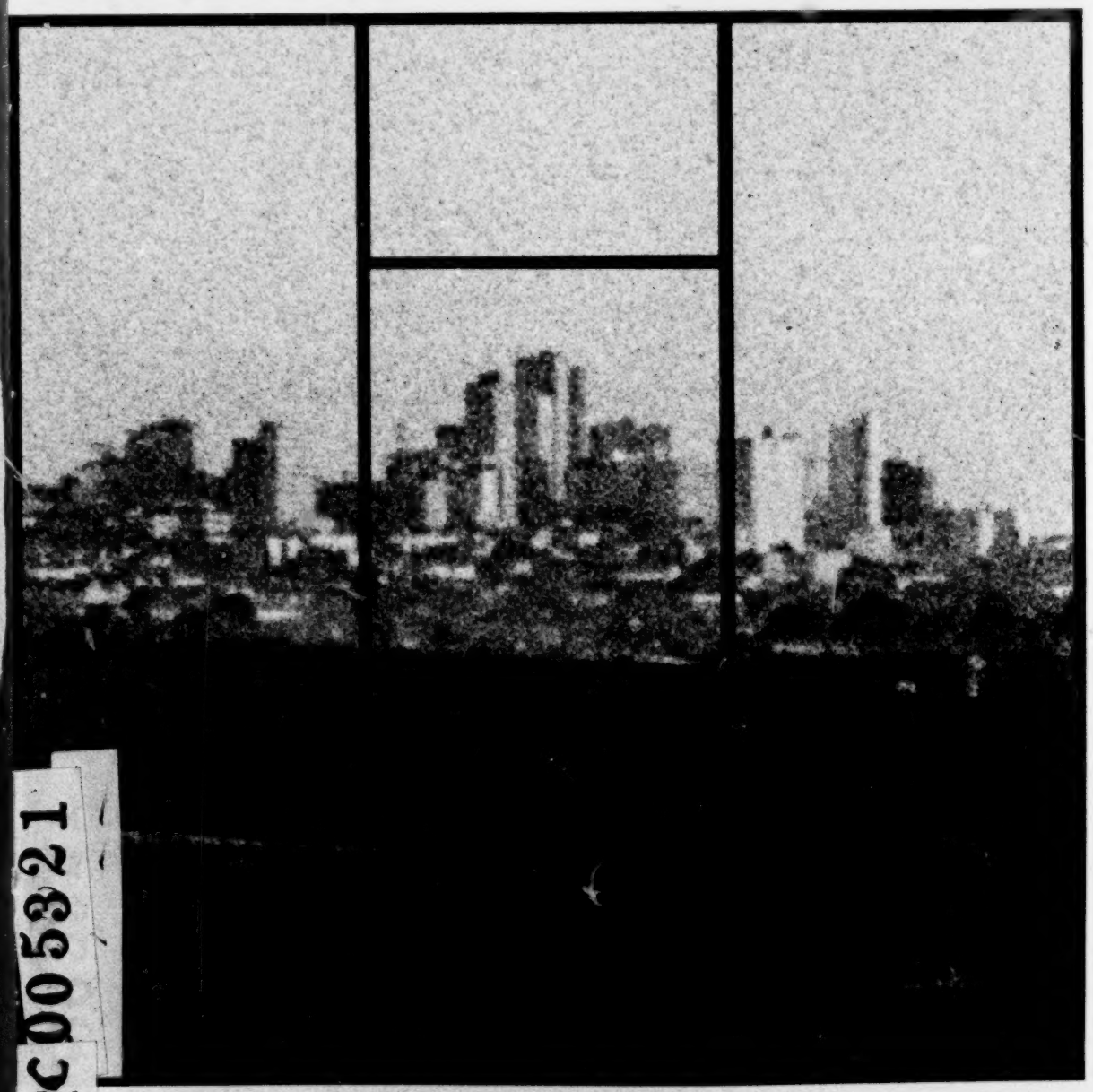
THE MONETARY REWARDS OF MIGRATION WITHIN THE U.S.

Richard F. Wertheimer II
The Urban Institute, Washington, D.C.



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Preface

The Urban Institute is concerned with unemployment and low income problems in cities and is seeking solutions in part through the analysis of labor supply and demand within metropolitan labor markets.

Domestic migration both affects and is affected by conditions in urban labor markets. On the one hand, migration affects the size and composition of the labor force. On the other hand, the tightness of the labor market and the wages offered in the labor market affect the amount of migration.

This study focuses on the economic benefit derived from migration by the migrant himself. It presents a methodology for computing monetary benefits, an estimate of these benefits, and the implication of the findings for public policy. An earlier draft of this study served as a basis for a seminar held at The Urban Institute in February 1970 for persons representing a variety of public interest groups and government agencies; this version incorporates certain insights and issues raised at that time.

The importance of the report lies not only in the hypotheses that it supports and quantifies, but also in helping correct serious misconceptions about migration and its implications for cities.

The Department of Housing and Urban Development provides funds for The Urban Institute's urban employment studies program, of which this migration research is a part. The findings and conclusions are those of the author and do not necessarily reflect the views of the sponsor.

Harvey A. Garn
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Washington, D.C.
March 1970

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1 Domestic Migration and Public Policy

The natural increase of the population and migration[1] jointly determine the geographic distribution of population within the United States. It is not surprising, therefore, that persons interested in preserving present population patterns or in modifying the directions in which the population appears to be shifting have proposed either the halting or the redirecting of migration flows. For example, there are proposals to halt migration into the cities, to divert migration into medium-sized cities, and to encourage migration into new towns or new cities.

To determine what constitutes an ideal distribution of population would be a staggering job, involving such issues as the optimal rate of economic growth, the distribution of income and wealth, economies of scale, external economies and external diseconomies in production of goods and services, and innumerable social, psychological, ecological and political issues. A more modest and realistic goal is to improve the distribution of population through measures that help the people who move, the cities, towns or rural areas from which they leave, and the receiving areas.

Yet there is a surprising lack of knowledge—and a good deal of misinformation—about the magnitude of migration, the characteristics of migrants, and the determinants and impacts of migration. Thus, the chances are that policies proposed to improve the distribution of population might do no good, or even do harm.

1. Migration in this report relates entirely to moves from one part of the United States to another and does not deal with immigration.

The major purpose of this study is to report on some results of research directed at one aspect of the migration issue—namely, the economic benefits of migration to the migrants themselves. In order to place this research in perspective, the policy issues concerning migration will be explored, and other research which sheds light on these issues will be briefly outlined.

Every year, approximately one of every six Americans moves. In a recent year, nearly 36,000,000 people changed residence. Of these, 12,940,000 moved from one county to another, 6,625,000 moved from one state to another, and 3,574,000 moved from one region to another.[2] Thus, a vast majority of movers moved only short distances. Those short-distance movers who are merely moving from one location to another within the same metropolitan areas will not be defined as migrants in this study. This does not imply that intra-metropolitan migration is a minor issue.[3]

Policy makers at all levels of government often perceive migration as having powerful social and economic impacts. City officials often blame migration for overcrowded schools, expanding welfare rolls and unbalanced budgets. But in-migration also creates demand for locally produced goods and services and makes possible a rapid expansion of employment without strong upward pressure on wages. At the same time, officials in rural areas blame migration for the loss of their most talented young people. The education of future out-migrants drains limited rural resources. On the other hand, out-migration reduces the competition for jobs as long as the number of jobs does not decline. This may in the short run reduce unemployment or raise wages. It is fair to assume that people decide to move or stay, not because of the economic or social impacts on the places of origin or

2. U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 193, "Mobility of the Population of the United States: March 1968 to March 1969," U.S. Government Printing Office, Washington, D.C., 1969.

3. Indeed, the movement of whites from the central city to the suburbs of most major metropolitan areas has contributed both to the decline of the proportion of the central city population which is white and to the fiscal crisis of central city governments.

destination, but because of the perceived benefits to themselves.

There is no coherent public policy at the federal, state, or local levels to deal with this complex situation. Instead, there is one group of programs and proposals designed to influence migration and another group of programs and proposals not designed for that purpose which nevertheless have substantial impact upon migration even though this impact frequently is overlooked.

Economic development programs for rural areas and towns, migration subsidy and counseling programs, and proposals to eliminate inter-state differences in welfare payments are all designed in part to affect migration. One purpose of rural economic development has been to stem out-migration. Migration subsidy and counseling programs are intended to improve the welfare of individual migrants by permitting them to locate in areas where they will have the greatest economic opportunity. One purpose of equalizing welfare payments is to eliminate an allegedly inappropriate stimulus of migration. (The underlying assumption is that, for some individuals, the presence of relatively high welfare payments in an area either stimulates inappropriate in-migration or discourages appropriate out-migration.)

Many federal government activities have regional effects—favoring some places rather than others—and inevitably affect migration. Among those with a substantial impact are: (1) defense procurement, (2) location of facilities or offices that boost federal employment, (3) agricultural subsidies, and (4) tariff policies. Defense procurement contracts are often concentrated in particular areas, such as the West Coast with its defense industries, so that the heavy concentration of new employment opportunities stimulate in-migration. Similarly, growth in federal employment in the Washington, D.C., metropolitan area induces sizable in-migration. Subsidies and tariffs protect some industries that are located in particular regions. In the case of areas with declining industries, subsidies and tariffs that retard the decrease in employment will cause net out-migration to take place more slowly.

State and local governments can influence the location of employment—and thus, indirectly, migration—through the levels and types of taxation and through subsidies, including industrial

development bonds. They also set levels of welfare payments and provide a wide range of public services—all of which may have direct or indirect effects upon migration.

The point is not necessarily to criticize these government programs but to stress that their effects on migration normally are not assessed. Governments do not know the magnitude of these effects or the impact of the resulting migration upon the welfare of individuals, cities, regions or the country as a whole.

Prevalent Myths

The rest of this chapter will deal first with what is known about migrants and migration, and then outline areas which need further exploration. The prevalence of a number of myths about migration suggest the usefulness of separating fact from fiction before dealing with the specific research of this study.

Migration is commonly viewed as massive, mostly rural in origin, and disproportionately black. Migrants are commonly viewed as poorly educated, prone to unemployment, likely to be on welfare, likely to riot and rather unsystematic in their choice of destinations. As will be seen, virtually all of these impressions are false.

The Size of Migration Flows

Migration in the United States has been of sizable proportions. Whether inter-county, inter-state, inter-regional, or international it has been largely responsible for the steady urbanization of the United States, transforming a nation that was over 95 percent rural in 1790 to one that is over 70 percent urban today. The flow from the farm to the city has persisted over the entire period of this country's existence.[4]

Migration results in sizable net transfers of population from some regions to others. For example, between March 1966 and March 1967, 1,022,000 people migrated from the South to the

4. U.S. Bureau of the Census, *1960 Census of Population, United States Summary*, U.S. Government Printing Office, Washington, D.C., 1961.

West, while only 657,000 people migrated from the West to the South.[5]

It is easy, however, to exaggerate the current importance of migration flows. Two flows which have been persistently given overemphasis are the flow of people off farms and the flow of Negroes from the South to the North.

The average annual net out-migration from farms has fallen from 1,115,000 during 1950-1955 to 711,000 during 1965-1968.[6] This is due to the decrease in the size of the farm population (now only about 10 million persons) rather than a decline in the propensity of farm residents to migrate.[7]

The average annual net migration of nonwhites from the South has declined from about 160,000 per year during 1940-1950 to about 145,000 per year during 1950-1960 and to less than 90,000 per year during 1960-1969.[8] This is in spite of an increase in the Southern Negro population from less than 10,000,000 in 1940 to over 11,500,000 in 1969.[9] Furthermore, only about one-third of the increase in the Negro population in central cities is due to net migration.[10] The rest is due to the natural increase of the population already there.

5. U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 171, "Mobility of the Population of the United States: March 1967 to March 1968," U.S. Government Printing Office, Washington, D.C., 1968.

6. U.S. Department of Agriculture, Economic Research Service, "U.S. Population Mobility and Distribution," ERS-436 (1969), p. 33.

7. With the current concern about racial matters, it would be much preferred to be able to speak specifically of Negroes, American Indians, Orientals and so forth. But one is constrained to fall back on the term *nonwhite* because the Census data-collecting system often lumps together all except whites in that category. Since 90 percent of all nonwhites in the United States are Negro, the nonwhite category frequently is used as an approximation of Negro statistics. Where statistics are available, the term Negro or Black is used to so indicate.

8. U.S. Bureau of the Census, *Current Population Reports*, Series P-23, No. 29, "The Social and Economic Status of Negroes in the United States, 1969," U.S. Government Printing Office, Washington, D.C., 1969, p. 5.

9. *Ibid.*

10. *Ibid.*, p. ix.

Personal Characteristics of Migrants

Migrants tend to have personal characteristics different from a typical cross-section of the population. Migrants, on the average, are younger and better educated than the rest of the population.[11] City-to-city migrants are generally better educated than the average resident of either the origin or destination city.[12] Nonwhite rural-to-urban migrants are better educated than the average nonwhite resident at the origin but somewhat less educated than the average nonwhite at the destination.[13] Nonwhite rural-to-urban migrants are about as likely to be employed as other nonwhite urban dwellers.[14] A higher proportion of whites migrate than nonwhites. Furthermore, in a study of nine central cities chosen because of heavy nonwhite in-migration, all but one of the cities had (in absolute numbers) significantly more white rural-to-urban migration than nonwhite rural-to-urban migration.[15] The reason why central cities are becoming increasingly black is related more to the out-migration of whites than to the in-migration of blacks.

The Benefits of Migration

It can be assumed that people in a free society seek to maximize their satisfaction. There is no reason to suppose that migration is not part of this phenomenon. Indeed, many people concerned about migration have pointed to the importance of economic motivation.

To the extent migration is profitable, this would appear to result in part from the differentials in wages between regions and

11. John Lansing and Eva Mueller, *The Geographic Mobility of Labor* (Ann Arbor; Survey Research Center, 1967), pp. 39, 43.

12. Karl and Alma Tauber, *Negroes in Cities* (Chicago, 1965), pp. 134-135.

13. U.S. Bureau of the Census, *1960 Census of Population, Mobility for Metropolitan Areas*, U.S. Government Printing Office, Washington, D.C., 1961.

14. *Ibid*. This is true even after adjusting for age.

15. *Ibid*. The nine cities were Atlanta, Baltimore, Chicago, Detroit, Newark, New York, Philadelphia, St. Louis, and Washington. Newark was the exception.

between rural and urban areas. These differentials have diminished but not disappeared over time.

Previous work offers strong evidence that at least certain categories of migrants derive substantial economic benefits from migration. For example, Lansing and Morgan found that heads of families who grew up on a farm but moved to an urban area earned, in 1964, an average of $1,519 a year more than those who remained in a rural area.[16] Migration appears to flow toward places with low unemployment and high income, although places with high unemployment and low incomes do not necessarily experience exceptionally large gross outflows of migrants.[17] The tendency of migrants to be young also ha been related to economic incentives.[18]

This study sought both to verify that migration brings economic gains and to quantify the extent of such gains for many different categories of migrants.

The Unknowns

Although a good deal is known about migration, much research remains to be done if there is to be a sound basis for a coherent public policy on migration. The most serious gaps in knowledge have been (1) the benefits and costs of migrating for the individual migrant, (2) the impact of government programs upon migration flows, (3) the impact of migration upon the sending and receiving areas, and (4) the impact of migration upon the national economy.

Analysis of item (1) is the major emphasis of this study so that items (2), (3), and (4) will receive little attention. Moreover, estimation of the impact of migration upon the sending and re-

16. John B. Lansing and James N. Morgan, "The Effect of Geographical Mobility on Income," *Journal of Human Resources*, Vol. II, No. 4 (Fall, 1967), pp. 449-460.

17. Out-migration seems to depend largely on the age composition of an area's population. The more young people, the heavier the out-migration. See Ira Lowry, *Migration and Metropolitan Growth* (San Francisco, 1966), pp. 23-30.

18. This was first pointed out by Gary Becker in *Human Capital* (New York: National Bureau of Economic Research, 1964), pp. 50-51 (fn. 20).

ceiving areas (item 3) is particularly difficult, partly because the benefits and costs are difficult to measure, and partly because benefits and costs are difficult to define. Some essential elements requiring analysis for this purpose include estimates of migrants' use of public services and facilities, their contribution to tax-revenues, their impact on racial mix, their role in promoting economic growth and their effect on crime in the receiving area. Similarly, for the sending area it is important to estimate the funds spent on future out-migrants, the effect of their leaving on local wages and employment opportunities, the reduction in tax revenues and use of public facilities, and the effect on economic growth.

Calculation of the economic gain for the individual migrant is the subject of the remainder of this paper. Given knowledge about the individual benefits, and additional work on the impact of migration upon sending and receiving areas, decision-makers will be better able to design policies consistent with their goals.

2 An Economic Theory of Migration

Migration as an Investment in Human Capital

Migration can be viewed as an investment in human capital.[19] The migrant incurs costs—primarily moving costs and foregone earnings—in the expectation of an increased flow of income in the future. In reality, many others factors also influence migration decisions, so this view is an abstraction. However, the abstraction is potentially a useful one to the extent that economic factors do influence migration flows.

Migration can increase a migrant's expected future income in at least three important ways. Since there are variations from place to place in basic wage rates, in opportunities for training and education (including differences in quality) and in the economic rewards for attained skills, migration may permit those who move to more advantageous locations to make more profitable investments in human capital.

For each possible location, including the one where the individual is presently located, there is an optimal portfolio of investments in human capital (which may or may not be constant over time). The return to migration[20] to a particular destination can be defined as the difference between the present value of the lifetime income flow at the destination (given an optimal program

19. The seminal article on this point is Larry Sjaastad, "The Costs and Returns of Human Migration," *Journal of Political Economy* (Supplement), LXX, No. 5, Part 2 (October, 1962), pp. 80-93.

20. The term "return to migration" is used in this study solely to mean the economic benefit attributable to migration.

of investment in human capital there) and the present value of the lifetime income flow at the origin (again, given an optimal program of investment in human capital at the origin) less the costs of moving and of switching from the origin portfolio to the destination portfolio.

The prospective migrant can make only a crude calculation of this return and may take non-economic considerations into account. A procedure which a prospective migrant can follow is to calculate an expected return based upon the likelihood of occurrence which he assigns to various possible income differentials between the origin and destination over time.

Turning from the complex reasons, non-economic as well as economic and subconscious as well as conscious, that might lead a person to migrate, assume that a prospective migrant currently residing at a particular location A is concerned with—and able to calculate—the expected economic benefits of moving to each of J other locations. The prospective migrant is not necessarily assumed to be able to perceive with certainty what the income differential $y^i(t)$ between location A and each location j (j = 1, . . . , J) will be at various times in the future. Instead it is assumed that he can assign a probability of occurrence, p_i^j ($\sum_i p_i^j = 1$), to each of a finite number of income differential paths, y_i^j, for each location.

The prospective migrant's expected economic benefit, $E(Z^j)$, from migrating to location j is given by

$$E(Z^j) = \sum_i p_i^j \, {}_0\int^T \left[e^{-rt} y_i^j(t)\right] dt, \qquad (1)$$

where r is the individual's rate of time discount and T is the expected year of death. If C^j is the expected cost of moving plus the expected cost of switching to the human capital portfolio optimal at location j, then the expected return, R^j, to migration to location j is given by

$$R^j = E(Z^j) - C^j \qquad (2)$$

If we assume that a migrant decides to move solely on the basis of economic considerations, he would use as a decision rule—if the return, R^j, to migrating to any location j, is positive, choose that j as a destination which maximizes R^j; otherwise stay at the origin.

If the prospective migrant takes into account "psychic" factors, the net psychic cost, P^j, must be subtracted from the expected return to obtain the "real" return, Q^j. (Psychic costs may be either positive or negative.) Thus,

$$Q^j = \left[\sum_i p_i^j \int_o^T e^{-rt} y_i^j (t)\, dt\right] - C^j - P^j \qquad (3)$$

Most of the variables in equation (3) take on different values depending upon the individual making the decision. Some of these variables may be related to demographic characteristics describing the migrant. Some are related to labor market conditions in different geographic areas. Some may relate only to the psychological make-up of the prospective migrant. In the next section, this expected return and the variables upon which it depends will be analyzed, and hypotheses about the realized return of actual migrants will be developed.

Some Hypotheses about the Return to Migration

The return to migration actually realized by migrants is related to their decision to migrate, which is based on the anticipated benefits calculated by the prospective migrants. This is because the group of individuals who have actually moved will have, according to the theory advanced in the last section, expected a positive real return to result from migrating and should have chosen as a destination the place offering the largest real return.

The realized return is also related to market conditions as they actually have been (as opposed to how migrants perceived them). Thus, the return actually realized by migrants is the result of both their perceptions of how the world was going to look and how the world actually turned out to be.

The Return to Migration and Its Relation to Origin and Destination

To analyze geographic wage differentials one could divide the United States in many ways. Two common divisions are the South-North and the rural-urban. Victor Fuchs has documented the existence of both differentials, showing that the race, sex, age and education of the population residing in these four sectors cannot fully explain the differentials.[21] Further, Fuchs shows that in urban areas, the larger the city, the higher the incomes.[22]

This pattern of differentials leads to a related set of hypotheses. First, migration from South to North should pay off. Second, migration from rural areas to cities should pay off. Third, the return should be larger for large cities than for small cities.

These hypotheses run counter to the conjecture that migrants carry with them a rural or Southern essence which prevents them from adjusting to life in the city or in the North, and leaves them little better off than they were before moving.

The Return to Migration and Its Relation to Education

The relationship between the return to migration and education is complex.

Fuchs found that the relative wage differential between the South and the rest of the country is smaller for persons with high levels of education.[23] And he found no clear evidence that a high education level exerted the same moderating influence on wage differentials between rural and urban areas, or among urban areas of different size.[24]

However, the situation is less clear-cut when you look at dollar differentials rather than dollar ratios. Since the wage differ-

21. Victor R. Fuchs, *Differentials in Hourly Earnings by Region and City Size*, 1959 (Occasional Paper 101; New York: National Bureau of Economic Research, 1967).
22. *Ibid.*, pp. 10-16.
23. *Ibid.*, p. 23.
24. *Ibid.*, p. 24.

entials among education classes are quite large, the *absolute* wage differentials between South and North, between rural areas and urban areas, and among urban areas of different size bear little relation to the levels of education. For example, both the 44% North-South differential for persons with 0-4 years of education and the 26% North-South differential for persons with 5-8 years of education amount to about a 50¢ an hour differential. Furthermore, it is possible that perceptions of the return to migration may vary with the level of education. It seems reasonable to assume that poorly educated persons are less likely than the well-educated to have accurate information upon which to compute an expected return. Thus, the less-educated would be more likely to choose as destinations places which do not offer the best chances for a large return.

Hence, we hypothesize that the return to migration increases with level of education. However, the *relative* annual income differential may not increase with level of education since relative wage differentials decrease with increasing levels of education.

The Return to Migration and Its Relation to Age

Migrants tend to be young. The median age of all migrants in the United States is 23 years while the median age of non-movers is 30 years.[25] Gary Becker has advanced the explanation that persons for whom migration is profitable find a strong incentive to move early. This is due not to a difference in the length of the payoff period, *per se*, but rather to the loss of the early years of payoff which are discounted the least.[26] Thus, he showed that, as viewed by the potential migrant at an early age, the prospective return to immediate migration will be considerably larger than the prospective return to migration sometime in the future. We shall be able to quantify this difference.

25. U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 193, "Mobility of the Population of the United States: March 1968 to March 1969," U.S. Government Printing Office, Washington, D.C., 1969.
26. Gary Becker, *Human Capital*, pp. 50-51 (fn. 20).

Another possible explanation can be given for the higher migration rates for young people. A young person with few family ties or responsibilities can move easily and quickly, and he can afford to take career risks in the hope of larger future gains (in contrast to the pressures for caution and conservatism that often bear on an established home and family).

The Return to Migration and Its Relation to Race

The relative wage differentials between South and North and between rural areas and cities are larger for nonwhites than for whites.[27] (The income base is smaller for nonwhites, so the *absolute* rural-urban differential is about the same for whites and nonwhites. Even the absolute North-South differential is larger for nonwhites.) This would imply that the return to South-to-North migration should be higher for nonwhites than whites, but that the absolute return to rural-to-urban migration should be about the same for nonwhites and whites. (This assumes that, holding education constant, nonwhites are as knowledgeable about opportunities as whites.)

The Return to Migration and Its Relation to Sex

Females who are heads of families are less likely than males to have other adults at home to help care for children. Thus, the females may be more likely than males to withdraw partially from the labor force if they receive wage increases through migration. Furthermore, the opportunity to receive welfare payments is much more available to the female heading a family than to the male. To the extent that welfare payments are higher in Northern and urban states, there is less incentive for females to work there than in rural areas and the South.

Both of these factors tend to work in the direction of reducing the return to migration. Hence, it is hypothesized that the return to migration will be less for females than for males.

27. Fuchs, pp. 7, 12.

Earnings Differentials Over Time

There is no reason to expect that the annual earnings differential attributable to migration is constant over time. On the contrary, due to the problems of labor market search, lack of knowledge about opportunities in the new location, adjustment to a new social environment, and investments in training, a new arrival to a region or city may experience a period in which his earnings decline or, at least, do not increase. Thus, we hypothesize that the earnings differential, which leads to a positive return to migration, occurs either in reduced size or not at all during the first few years after migration.

3 The Method of Analysis

In this chapter the hypotheses outlined earlier are tested using multiple regression analysis to obtain an estimate of the annual earnings differential attributable to migration. Earnings of the family head are used as the dependent variable and age, education, migration status, race and sex used as explanatory variables. (Observations on these variables are available from the 1967 Survey of Economic Opportunity.) This procedure assumes that each of the explanatory variables influences income and consequently that certain amounts of income can be attributed to each of them.

The Appropriateness of the Classical Linear Regression Model

Before fully specifying the model, several difficulties with this approach can be discussed. These difficulties revolve around the appropriateness of the classical linear regression model.

First, the variables used to explain income are likely to be correlated with one another. (For example, there is an inverse correlation between age and education.) There are two sub-cases:

1. If both of two highly correlated variables are included in the equation, estimates of the regression coefficients are more likely to be insignificant. Since we are interested primarily in the regression coefficient of the migration variables, this is not a serious problem provided the multi-collinearity is confined to the *other* explanatory variables. If, however, the migration variables are correlated with other explanatory variables, the reliability of

the estimate of the earnings differential attributable to migration will be reduced.

2. If one of the correlated explanatory variables is not included in the estimated equation, either through improper theoretical specification or lack of data, and the migration variable is correlated with it, the migration regression coefficient may be biased.

On the basis of available statistical evidence and on *a priori* grounds, it seems likely that both of these difficulties are present. As we noted earlier, age and education are inversely correlated. Propensity to migrate and age are also inversely correlated. Furthermore, it seems likely that propensity to migrate is directly correlated with ability and ambition—neither of which can be included in the equation due to lack of data. (To the extent that ability and ambition are correlated with educational attainment, this omission is accounted for in the best available way and is less serious.) If the migration variable is acting to some extent as a proxy for other variables directly correlated with it and positively correlated with income, the regression coefficient of the migration variable will be biased upward. Hence, the estimate of the return to migration should probably be regarded as an upper limit to the actual return.

Second, the estimated return is the *average* return rather than the *marginal* return. The fact that the first thousand migrants to a city receive a large return on the average does not imply that the next thousand migrants will receive the same return. At least in the short-run, heavy in-migration is likely to exert downward pressure on wages and upward pressure on the unemployment rate.

Third, the explanatory variables may not influence income independently of one another. For example, the return to migration may be higher for persons with higher levels of educational attainment. Interactions of this sort can be taken care of by including as explanatory variables the products of various combinations of two or more of the explanatory variables. However, this procedure has the disadvantage of making the analysis more unwieldy and also using up extra degrees of freedom.

Finally, the explanatory variables may not be linearly related to income. There is evidence, for example, that neither education nor age is linearly related to income. In cases where the proper functional form is known, it can be estimated, for example, by including higher order values of the explanatory variable. In cases where the proper functional form is unknown, it can be approximated by dividing the explanatory variable into segments and using dummy variables to estimate a step function. Utilization of dummy variables, like inclusion of interaction terms, has the disadvantage of using up extra degrees of freedom. This problem is particularly acute if two variables, both of which are being analyzed via dummy variables, interact.

Migration Viewed as an Explanatory Variable

Migration is not a cimple dichotomous variable, as if it were a case either of moving or of staying. There are interregional moves, interstate moves, local moves, moves from rural to urban areas, moves from urban areas of one size to urban areas of another size, and so on. In addition, there are moves that took place one year ago and moves that took place forty years ago. Since there is no reason to expect the current earnings differential attributable to migration to be the same for all categories of migration, several migration variables need to be defined and a whole set of regression coefficients computed.

In this study, we examine two major types of migration.[28] The first type is migration out of and into the South. The second type is migration into, out of, and among urban areas. Movements within a given urban area and movements from one rural area to another which do not cross the border between the South and the rest of the country are not considered in this study. We shall concentrate on South-North migration and rural-urban migration

28. Only moves occurring after the sixteenth birthday of the family head are considered in this study. In the event of multiple moves, only the most recent move of the family head is considered.

since policy makers seem to be most concerned with these particular flows.

With respect to migration into and out of the South, each observation in the sample falls into one of four categories. The four categories are Southern nonmigrant, Northern nonmigrant, South-to-North migrant, and North-to-South migrant. With respect to migration into, out of, and among urban areas, each observation in the sample falls into one of eight categories. The eight categories are rural nonmigrant,[29] urban nonmigrant,[30] urban-to-urban migrant, rural-to-small city[31] migrant, rural-to-medium city[32] migrant, rural-to-large city[33] migrant, rural-to-very large city migrant,[34] and urban-to-rural migrant.

With this set of definitions it is possible to distinguish an individual who is not a migrant with respect to the first (South-North) type of migration but who is a migrant with respect to the other (rural-urban) type of migration. For example, an individual moving from a farm in Wisconsin to Chicago would not be a migrant in terms of South-North movement, but he would be a migrant of the rural-to-very large city category. An individual moving from a farm in Mississippi to Chicago would be in two categories of migrants: South-to-North migrant and a rural-to-very large city migrant.

In some cases migrants have been divided into sub-categories indicating whether the migrant moved 0-5 years ago, 6-35 years ago, or over 35 years ago. This makes it possible to estimate changes over time in the annual income differential attributable to migration.

29. This category also includes migration within rural areas.
30. This category also includes movements within a given urban area.
31. A small city is defined as an urban place with population less than 50,000.
32. A medium city is defined as having a population between 50,000 and 250,000.
33. A large city is defined as having a population between 250,000 and 750,000.
34. A very large city is defined as having a population over 750,000.

The Data

The source of data for the empirical analysis is the 1967 Survey of Economic Opportunity (SEO). The survey was conducted for the Office of Economic Opportunity by the Bureau of the Census and is basically a supplement to the Current Population Survey. Additional questions were asked, and a national self-weighting sample of 18,000 households was supplemented by an additional sample of 12,000 drawn from counties with large nonwhite populations. In order to take advantage of as large a sample as possible and, in addition, to make the part of the sample representing the poor and nonwhite populations as large as possible, the two samples have been pooled.

The SEO file is constructed in such a way as to make it possible to obtain information about households,[35] "interview units,"[36] and persons. The interview unit was chosen as the basic unit to be analyzed since decisions about migration seem likely to be undertaken by an entire family rather than separately by the individuals comprising a family. This assumption does not rule out the possibility that many families may move in two stages—the family head moving first to scout employment and housing possibilities and the rest of the family moving afterwards. The two stages of such a move are clearly not independent of one another and hence should not be treated as two moves.

Within the family we assume the family head to be the most important person with respect to migration decisions and income-earnings. Hence, we have used the earnings of the family head (plus any business or farm income accruing to the family) as the dependent variable in the analysis, and we have used the educational attainment, age, race, sex, and migration status of the family head as the independent variables in the analysis.

35. A household is the entire set of persons (related or unrelated) occupying a single housing unit.

36. An interview unit is either a family (which includes all related persons in a household) or an unrelated individual.

Income from other sources has been excluded from the analysis. These types of income include earnings by other members of the family, dividends, rental income, and transfer payments.

Earnings by secondary workers in the family have been omitted because inclusion would introduce further conceptual problems into the analysis. If, in general, income-earning opportunities for secondary workers are more available in the destination of migrants than they are in the origins, it is possible that this additional opportunity is taken into account by the migrant and constitutes part of the return to migration. Suppose, on the other hand, that income-earning opportunities for secondary workers are just as available in origins as they are in destinations. Suppose, further, that whatever psychological or social factors tend to make a family migrate also make it likely that the family will have secondary wage earners. Then to include all of the earnings of other members of the family would be a distortion since at least a portion of the total would have been earned even if the family had not moved. (Inclusion of earnings of secondary workers is a possible extension of the analysis done here, provided that the conceptual problems outlined in the paragraph above are recognized.)

Income from dividends and rents has been excluded in the absence of any reason to believe it would differ geographically as far as the individual migrant is concerned. In short, it is assumed that capital markets are less segmented geographically than labor markets.

Transfer payments (welfare, social security, unemployment benefits and so forth) have been excluded because it seemed important for policy purposes to distinguish between returns to migration resulting from a transfer and the returns resulting from earnings. If a policy maker is deciding whether to recommend a program to encourage (or discourage) migration, it makes a good deal of difference whether the increased income derived from migration is a result of more productive labor on the part of the migrant or increased receipt of transfer payments by the migrant. Including transfer payments as part of income is, of course, a

legitimate extension of the analysis. One would then have the "total" return to migration subdivided into two parts—increased earnings and increased transfer payments. It should be possible in the future to include transfer payments in the analysis.

Occupation of the family head and family assets have not been included as explanatory factors at this stage of the analysis. This is because the SEO permits identification only of present occupation and assets—not occupation and assets prior to migration. Migration may facilitate movement up the occupational ladder and accumulation of assets. Consequently, including current occupation and assets (which are likely to be positively correlated with current income) as explanatory variables would result in attributing to a person's occupation or asset position income which would not have been earned if the person had not moved.

In each of the regression equations reported on in this paper, the income-influencing factors have been divided into categories. For example, in the first regression education is divided into three categories: 0-8 years, 9-12 years, and 13 or more years.

The Migration Variables

The migration status itself is the most complex factor to deal with.

As stated earlier, two aspects of migration have been studied—migration out of and into the South and migration into, out of, and among urban areas. Due to the necessity of keeping individual responses to the SEO confidential, the level of detail about present geographic location is limited in most cases to the Census-defined regions of the United States—Northeast, North Central, West and South. Present state of residence is available only for some residents of large metropolitan areas. Unfortunately, the Census definition of South includes the border states of Delaware and Maryland plus the District of Columbia, each of which contains a large, more or less Northern-style metropolitan area. However, the SEO does permit identification of residents of the Baltimore and Washington metropolitan areas and also the *previous* state of residence (prior to migration) *if different from*

the migrant's present state. Consequently, the following definitions were used to distinguish North and South in this research: (1) If a family head is currently residing in a non-South Census region or in the Baltimore or Washington metropolitan areas and (a) has never moved 50 miles, (b) his previous state of residence is the same as his present state, or (c) his previous state of residence was not in the Deep South,[37] he is classified as a North non-mover (or stayer). (2) If a family head is currently residing in a non-South Census Region or in the Baltimore or Washington metropolitan areas and his previous state of residence was in the Deep South, he is classified as a South-to-North mover. (3) If a family head is currently residing in the South Census region (except in the Baltimore or Washington metropolitan areas) and (a) has never moved 50 miles, (b) his previous state of residence is the same as his present state, or (c) his previous state of residence was in the Deep South, he is classified as a South stayer. (4) If a family head is currently residing in the South Census region (except the Baltimore or Washington metropolitan areas) and his previous state of residence was not in the Deep South, he is classified as a North-to-South mover.[38]

With respect to migration into, out of, and among urban areas, the following definitions were used. (1) A family head whose present residence and previous place of residence (if any) is rural is classified as a rural stayer. (2) A family head whose present residence is urban and who has never moved 50 miles is classified as an urban stayer. (3) A family head whose present residence is urban and whose previous residence was also urban is classified as an urban-to-urban mover. (4) A family head whose present residence is urban but is outside of an SMSA and whose previous

37. Deep South is defined as Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia.

38. This set of definitions creates certain anomalies (e.g., a migrant who moves at least 50 miles from any point within the state of Maryland to any other point within the state except the Baltimore or Washington SMSA's will be classified as a North-to-South migrant), but these are considered less serious than the anomalies our definitions were designed to overcome.

residence was a rural area is classified as a rural-to-small city migrant. (5) A family head whose present residence is in an SMSA whose population is less than 250,000 and whose previous residence was a rural area is classified as a rural-to-medium city migrant. (6) A family head whose present residence is in an SMSA whose population is greater than 250,000 but less than 750,000 and whose previous residence was a rural area is classified as a rural-to-large city migrant. (7) A family head whose present residence is in an SMSA whose population is greater than 750,000 is classified as a rural-to-very large city migrant. (8) A person whose present residence is rural and whose previous residence was urban is classified as an urban-to-rural migrant. In cases where the family has moved more than once, the most recent move is the one considered.

The Use of Dummy Variables

Each set of categories can be represented by a set of dummy variables. In order to avoid singularity in the cross-product matrix, the k categories for each explanatory factor are represented by k - 1 dummy variables. (For example, in some regressions there are three education categories, which are represented by two dummy variables. The first dummy variable takes on the value 1 whenever the educational attainment of the family head is 9-12 years and the value 0 otherwise. The second dummy variable takes on the value 1 whenever the educational attainment of the family head is over 12 years and the value 0 otherwise.)

In order to avoid making the assumption that the effect of one factor (e.g., education) upon income is unaffected by the level of another factor (e.g., age), additional dummy variables, which represent interactions among the explanatory variables, are included in several equations. These are constructed by multiplying two or more dummy variables together. It is not feasible, however, to include all possible interactions among the categories of the explanatory factors without a virtually infinite number of observations. Consequently, only a subset of all possible interactions was actually included in preliminary specification of the equations esti-

mated, and generally only those which had t values significant to the .10 level were actually included in the final version of the equations reported.

Conversion of Regression Results into Estimates of Income Differentials Attributable to Migration

In order to compute the income differentials attributable to migration, appropriate values of the dummy variables can be substituted into the regression equation in order to obtain predicted incomes for a particular migrant group and the stayer group relevant for comparison (e.g., college-educated, nonwhite, South-to-North migrants and college-educated, nonwhite South stayers.) The difference between these two figures is the income difference attributable to migration.

Since the two computed sums will have many elements in common (e.g., the dummy variable representing college education) which simply cancel one another when the difference between the two sums is taken, it is only necessary to consider the elements which differ in value.

The method of calculating the income difference and a test of its significance is best explained by a hypothetical example. Suppose the equation we are estimating includes only two explanatory factors—education and status with respect to migration out of or into the South. Let educational attainment be divided into three categories—0-8 years, 9-12 years, and over 12 years. Let migration status be divided into four categories—South stayer, South-to-North mover, North-to-South mover and North stayer.

The three education categories can be represented by two dummy variables, E_2 and E_3, representing 9-12 years and over 12 years, respectively. The four migration categories can be represented by three dummy variables, M_2, M_3 and M_4, representing South-to-North mover, North-to-South mover, and North stayer, respectively. A constant term, C, can also be included. This yields a total of six regression coefficients to be estimated.

Suppose that least-squares estimation yields the results given in Table 1.

Table 1. Sample Results (I) to Illustrate Analytic Technique

Variable	Regression Coefficient	Standard Error	t*
C	$ 1000	$ 500	2.00
E_2	2000	200	10.00
E_3	5000	1000	5.00
M_2	1000	250	4.00
M_3	−1000	500	2.00
M_4	2000	1000	2.00

*The t-statistic is computed by dividing the regression coefficient by its standard error.

These results imply expected incomes for each of the groups defined by the values of the dummy variables. For example, the expected income of a South stayer with 0-8 years of education is given by the regression coefficient of the constant term or $1000. (In this case all the dummy variables take on the value zero.) The South-North mover with 0-8 years of education has an expected income of $2000, given by the sum of the coefficients associated with C and M_2. (In this case all the dummy variables but M_2 take on the value zero.) The difference between the expected income of the South-North mover with 0-8 years of education and the South stayer with 0-8 years of education is $2000 minus $1000 or $1000.

Note that the difference between the expected income of South-North movers and South stayers is given by M_2 for *each* level of education. This difference will always be of the form $(C + E_i + M_2) - (C + E_i)$, $i = 1, 2, 3$, and $E_1 = 0$. Since the estimate of the income differential attributable to migration is given by a single regression coefficient, M_2, its standard error can be used to test its significance.

However, the form given above does not permit testing of the hypothesis that the income differential attributable to migration varies with the level of education. To test whether the income differential attributable to South-North migration is different for

those persons with over 12 years of education, we introduce a new variable into the equation—$E_3 x M_2$. This interaction term takes on the value 1 for observations where the individual has both completed more than 12 years of education and moved from South to North. It takes on the value 0 otherwise.

Table 2. Sample Results (II) to Illustrate Analytic Technique

Variable	Regression Coefficient	Standard Error	t
C	$ 1000	$ 500	2.00
E_2	2000	200	10.00
E_3	4500	1500	3.00
M_2	900	300	3.00
M_3	−1000	500	2.00
M_4	2000	1000	2.00
$E_3 x M_2$	800	400	2.00

Suppose that least-squares estimation of this equation yields the results given in Table 2. For persons with 0-12 years of education, the income differential attributable to migration is still given by M_2—in this case $900. The differential for those with more than 12 years of education, however, is given by $M_2 + (E_3 x M_2)$ —in this case $1700. The significance of the *difference* between $M_2 + (E_3 x M_2)$ and M_2 is given by the t-statistic for $(E_3 x M_2)$—in this case 2.00. In order to test whether the newly computed differential is significantly different from zero, we must compute its standard error S*. This can be achieved with the formula

$$S^* = \hat{S} \sqrt{d' (X'X)^{-1} d},$$

$$\text{where } d = [0\ 0\ 0\ 1\ 0\ 0\ 1],$$

$$\hat{S} = \sqrt{\sum_{i=1}^{n} e_i^2 / (n-k)}$$

Table 3. Sample Inverse of Cross-Product Matrix for Regression Results II

.0156	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}
X_{12}	.0025	X_{23}	X_{24}	X_{25}	X_{26}	X_{27}
X_{13}	X_{23}	.1406	X_{34}	X_{35}	X_{36}	X_{37}
X_{14}	X_{24}	X_{34}	.0056	X_{45}	X_{46}	.0019
X_{15}	X_{25}	X_{35}	X_{45}	.0156	X_{56}	X_{57}
X_{16}	X_{26}	X_{36}	X_{46}	X_{56}	.0625	X_{67}
X_{17}	X_{27}	X_{37}	.0019	X_{57}	X_{67}	.0100

$\hat{S} = 4000$

and $(X'X)^{-1}$ is the inverse of the cross-product matrix.[39] (Note that this formula requires knowledge of the off-diagonal elements of the variance-covariance matrix.) Assume the variance-covariance matrix is as given in Table 3.

Then the standard error is given by

$$S^* = 4000 \sqrt{.0056 + .0100 + 2 \times .0019}$$

$$= 4000 \sqrt{.0194}$$

The value of the t-statistic testing the hypothesis that the differential is not significantly different from zero is, therefore, 1700/557 or 3.05.

The significance of the difference between two regression coefficients can be computed in similar fashion. For example, the income differential attributable to North-South migration is given by M_3-M_4 (or - $3000). The standard error S^{**} of this differential is given by

$$S^{**} = \hat{S} \sqrt{X_{55} + X_{66} - 2X_{56}} \quad .$$

39. J. Johnston, *Econometric Methods* (New York, 1963), pp. 131-133.

4 The Results

This chapter presents both the actual regression coefficients and the tables of income differentials computed from the coefficients. Tests of significance are employed as follows. If a differential is not significantly different from zero at the .10 level, a zero appears. If an interaction term is not significantly different from zero at the .10 level, the term is not used in computing differentials.

The Regressions

Tables 4 and 5 present the two simplest equations which were estimated. Neither equation contains any interaction terms. Consequently they can be used only to shed light on the hypotheses that a positive income differential exists for South-to-North and rural-to-urban migration and that the rural-to-urban differential is larger for the larger cities.

All three hypotheses are supported. The difference in Table 4 between the South-North migrant coefficient (25) and the Southern nonmigrant coefficient (-775) is an estimate of the income differential attributable to South-North migration. This estimate is thus $800 per year. Using the technique described in the previous chapter and using the estimated covariance between the two coefficients (.00011), we obtain a standard error of 100 and thus a t-statistic of 8.55.

The rural-small or medium city migration income differential and the rural-large or very large city migration income differential

Table 4. Regression 1

Variable		Regression Coefficient[a]	Standard Error[a]	t-statistic
Constant Term		$1950	$250	7.49
Education:	0-8 years		(omitted)	
	9-12 years	875	75	11.99
	Over 12 years	2775	75	42.71
Age:	0-20 years		(omitted)	
	21-40 years	2350	250	9.52
	41-65 years	2775	250	11.14
	Over 65 years	−675	250	2.65
Sex:	Male		(omitted)	
	Female	−3000	50	49.13
Race:	White		(omitted)	
	Non-white	−1425	50	24.07
Northern non-migrant			(omitted)	
Southern non-migrant		−775	75	12.27
South-North migrant		25	100	0.18
North-South migrant		−1025	125	8.09
Rural non-migrant[b]			(omitted)	
Urban non-migrant[c]		850	75	10.71
Rural-small or medium city migrant		475	150	3.11
Rural-large or very large city migrant		850	100	7.84

$R^2 = .35$ Degrees of freedom: 22,638

[a]Rounded to nearest $25.00.
[b]Includes urban-rural migrants and rural-rural migrants.
[c]Includes urban-urban migrants.

are given directly by the appropriate coefficients, $475 and $850, respectively. Both coefficients are highly significant.

The regression reported on in Table 5 differs from the one in Table 4 by having an additional education category. This increases the R^2 but has little effect on the coefficients of the migration variables.

Table 5. Regression 2

Variable		Regression Coefficient[a]	Standard Error[a]	t-statistic
Constant Term		$2300	$250	9.10
Education:	0-8 years		(omitted)	
	9-11 years	900	75	12.49
	12-15 years	2125	75	32.08
	Over 15 years	5525	100	54.43
Age:	0-20 years		(omitted)	
	21-40 years	2025	250	8.34
	41-65 years	2400	250	9.93
	Over 65 years	−1000	250	4.10
Sex:	Male		(omitted)	
	Female	−2950	50	49.71
Race:	White		(omitted)	
	Non-white	−1325	50	22.82
Northern non-migrant			(omitted)	
Southern non-migrant		−800	50	12.82
South-North migrant		25	75	0.27
North-South migrant		−1075	125	8.62
Rural non-migrant[b]			(omitted)	
Urban non-migrant[c]		750	75	9.75
Rural-small or medium city migrant		425	150	2.84
Rural-large or very large city migrant		825	100	7.63

$R^2 = .39$ Degrees of freedom: 22,637

[a] Rounded to nearest $25.00.

[b] Includes urban-rural migrants and rural-rural migrants.

[c] Includes urban-urban migrants.

Thus, at this point we can tentatively accept the hypothesis that migrants from South to North and from rural areas to urban areas earn income differentials. Further, we can accept the hypothesis that the differential for the movers to large cities is larger than the differential for the movers to smaller cities.

These regressions do not, however, address the issue of variation in the differential by level of education or by race or sex. This is because no interactions have been included in either equation.

In Table 6, nineteen interaction terms are added to the second equation in order both to improve the fit of the equation and to test hypotheses about variation in the differential by education, race and sex.

The differential for all categories except those specifically mentioned in the table is once again roughly $800 per year. However, this table shows that there are important exceptions to this figure.

There is a highly significant interaction between South-North migration and college education (shown in the third column, second row of Table 6) which, when added to the $800 per year, yields a total differential of $3,075. Yet interactions between South-North migration and the other education categories proved to be insignificant.

An interaction between South-North migration and race yields a South-North differential of $1,125 per year for nonwhites.

A negative interaction between South-North migration and sex results in a differential for women which is not significantly different from zero. This means that females who are *currently* unrelated individuals[40] or who are *currently* heading families and who have migrated from South to North at sometime in the past, after their sixteenth birthday, earn no more than women in the same categories who have remained in the South. (The families may or may not have been female-headed when the migration actually took place.)

The income differential attributable to rural-small or medium city migration is $600 per year for all categories except the college-educated and females. A large negative interaction between college education and rural-small and medium city migration leads to a negative differential of $11,725 for the college-educated migrant. As with South-North migration, a negative interaction re-

40. "Unrelated" females refers to those women who, according to the Survey, are neither related to the head of the household nor themselves the head of a family.

Table 8. Regression 3

Migration Category	Simple Coefficient[a] (Standard error in parentheses)	Interaction Variable	Interaction Coefficient (Standard error in parentheses)	Interaction Coefficient + Simple Coefficient
South-North	$ -50 (150)		$	$
South	-825 (75)			
South-North minus South	775 (150)			
South-North		Education:	1175 (350)	
South		Over 15	-1125 (225)	
South-North minus South		Years	2300 (375)	3075 (375)
South-North		Race:	-50 (175)	
South		Non-white	-375 (125)	
South-North minus South			325 (175)	1125 (125)
South-North		Sex:	-150 (200)	
South		Female	750 (150)	
South-North minus South			-875 (200)	-100 (75)
Rural-Small[b]	600 (175)			
Rural-Small		Education: Over 15 Years	-1725 (500)	-1125 (500)
Rural-Small		Sex: Female	-475 (325)	125 (300)
Rural-Large[c]	1075 (125)			
Rural-Large		Sex: Female	-1100 (250)	-25 (225)
North-South	-1150 (121.51)			

[a]Applies to all categories except for those specifically listed in this table.
[b]Includes small and medium cities.
[c]Includes large and very large cities.

Regression 3 -- Remaining Coefficients

Variable	Regression Coefficient	Standard Error	t-statistic
Constant Term	$ 2225	$ 250	8.58
Education: 0-8 years		(Omitted)	
9-11 years	1300	100	14.47
12-15 years	2050	150	14.45
Over 15 years	5200	150	31.17
Age: 0-20 years		(Omitted)	
21-40 years	2025	250	8.46
41-65 years	1875	250	7.68
Over 65 years	-800	250	3.19
Sex: Male		(Omitted)	
Female	-2625	200	13.48
Race: White		(Omitted)	
Non-white	-850	125	7.48
(Education: 12-15 years) X (Age: 41-65)	750	125	6.18
(Education: Over 15 years) X (Age: 41-65)	2625	200	13.40
(Education: 12-15 years) X (Age: Over 65)	-1500	175	8.12
(Education: Over 15 years) X (Age: Over 65)	-2075	325	6.31
(Education: 9-11 years) X (Race: Non-white)	-1000	150	6.50
(Education: 12-15 years) X (Race: Non-white)	-1325	125	10.05
(Education: Over 15 years) X (Race: non-white)	-2100	275	7.68
(Sex: Female) X (Race: Non-white)	1075	125	8.51

Table 7. Regression 4

Migration Category	Simple Coefficient[a] (Standard error in parentheses)	Interaction Variable	Interaction Coefficient (Standard error in parentheses)[b]	Interaction Coefficient Plus Simple Coefficient
South-North (0-5 years)	$ -600 (300)		$	$
South-North (6-35 years)	375 (425)			
South-North (Over 35 years)	-275 (225)			
South Stayer	-625 (75)			
South-North (0-5 years) minus South Stayer	a			
South-North (6-35 years) minus South Stayer	1025 (425)			
South-North (Over 35 years) minus South Stayer	a			
South-North (0-5 years)		Education:	2275 (650)	
South-North (6-35 years)		Over 12 years	325 (425)	
South-North (Over 35 years)			2075 (1125)	
South Stayer			-775 (225)	
South-North (0-5 years) minus South Stayer			3075 (675)	3075 (675)
South-North (6-35 years) minus South Stayer			1100 (475)	2125 (650)
South-North (Over 35 years minus South Stayer			2875 (1150)	2875 (1150)
South-North (0-5 years)		Race:	500 (375)	
South Stayer		Nonwhite	-300 (125)	
South-North (0-5 years) minus South Stayer			800 (400)	800 (400)
Rural-Small (0-5 years)	- 25 (400)[a]			
Rural-Small (6-35 years)	550 (300)			
Rural-Small (Over 35 years)	825 (400)			
Rural-Medium (0-5 years)	700 (550)[a]			
Rural-Medium (6-35 years)	750 (250)			
Rural-Medium (Over 35 years)	950 (350)			
Rural-Medium (0-5 years)		Education: 9-12 years	-1400 (825)[a]	
Rural-Medium (0-5 years)		Education:	-4050 (1250)	-4050 (1250)
Rural-Large (0-5 years)	150 (375)[a]			
Rural-Large (6-35 years)	1375 (225)			
Rural-Large (Over 35 years)	1225 (375)			
Rural-Large (Over 35 years)		Education: 9-12 years	-1225 (825)[a]	
Rural-Large (6-35 years)		Education:	1650 (850)	3025 (875)
Rural-Large (Over 35 years)		Over 12 years	-2950 (1700)	a
Rural-Very Large (0-5 years)	600 (350)			
Rural-Very Large (6-35 years)	1675 (200)			
Rural-Very Large (Over 35 years)	825 (225)			
Rural-Very Large (0-5 years)		Education: Over 12 years	-2175 (925)	a
Rural-Very Large (6-35 years)		Race: Nonwhite	-700 (275)	975 (325)
North-South (0-5 years)	-1325 (275)			
North-South (6-35 years)	-850 (200)			
North-South (Over 35 years)	-475 (425)[a]			
North-South (0-5 years)		Education:	825 (425)	a
North-South (6-35 years)		9-12 years	-650 (325)	-1500 (375)

Table 7 Continued

Urban-Urban (0-5 years)	725 (125)			
Urban-Urban (6-35 years)	1350 (125)			
Urban-Urban (Over 35 years)	725 (175)			
Urban Stayer	800 (100)			
Urban-Urban (0-5 years) minus Urban Stayer	a			
Urban-Urban (6-35 years) minus Urban Stayer	525 (150)			
Urban-Urban (Over 35 years) minus Urban Stayer	a			
Urban-Urban (6-35 years)		Education:	325 (150)	
Urban Stayer		9-12 years	125 (125)	
Urban-Urban (6-35 years) minus Urban Stayer			200 (200)[a]	

[a]Statistic is not significantly different from zero at the .10 level.

[b]Due to the high marginal cost of computing the standard errors of numbers derived from more than one regression coefficient, an approximation was used. The approximation assumes that all of the off-diagonal elements of the inverse of the cross-product matrix are zero. The effect of this assumption is likely to be an increase in the estimated standard error over the true standard error. In Regression 3 in all cases the true standard error was smaller than the estimated standard error would have been if the approximation had been used.

Regression 4 -- Remaining Coefficients (Including Insignificant Interactions)

Variable	Regression Coefficient	Standard Error	t-statistic
Constant Term	$ 3100	$ 350	8.83
Education: 0-8 years		(Omitted)	
9-12 years	1175	475	2.46
Over 12 years	2350	325	7.06
Age: 0-20 years		(Omitted)	
21-40 years	1675	350	4.82
41-65 years	1325	350	3.85
Over 65 years	-1500	350	4.34
Sex: Male		(Omitted)	
Female	-2900	50	49.36
Race: White		(Omitted)	
Nonwhite	-925	100	9.29
(Race: Nonwhite) X (Education: 9-12 years)	-1000	125	7.91
(Race: Nonwhite) X (Education: Over 12 years)	-1675	275	6.18
(Education: 9-12 years) X (Age: 21-40 years)	525	500	1.10
(Education: 9-12 years) X (Age: 41-65 years)	1325	500	2.79
(Education: 9-12 years) X (Age: Over 65 years)	-750	500	1.52
(Education: Over 12 years) X (Age: 21-40 years)	2025	350	5.80
(Education: Over 12 years) X (Age: 41-65 years)	4250	325	12.73
(Education: Over 12 years) X (Urban-Urban: 0-5 years)	-550	250	2.05
(Education: Over 12 years) X (Urban-Urban: 6-35 years)	1375	225	5.83
(South-North: 6-35 years) X (Urban-Urban: 6-35 years)	-450	450	.98
(South-North: 6-35 years) X (Rural-Medium: 6-35 years)	-1400	900	1.56
(South-North: 6-35 years) X (Rural-Large: 6-35 years)	-700	675	1.03
(South-North: 6-35 years) X (Rural-Very Large: 6-35 years)	-550	500	1.12
Urban-Rural	-25	125	.27

sults in a differential not significantly different from zero for females.

For all groups except women the income differential attributable to migration from rural areas to large and very large cities is $1,075 per year. For women the differential is once again not significantly different from zero.

The remaining coefficients in Regression 3 are given in the second half of Table 6. Interactions between education and age were included because of the well known phenomenon of differences in age-earnings curves by education level. Interactions between education and race were included because of evidence presented by Becker that nonwhites receive a smaller return on their investment in education than do whites.[41] The interaction between female and nonwhite was included because of nonwhite females' high labor force participation rate relative to white females.

North-to-South migration yields a negative differential of $1,150.

This regression, although an improvement over the first two, still does not address the question of whether the differential varies depending upon the length of time that has passed since the move took place. The fourth regression, reported on in Table 7, fills this need by dividing each migrant category into three subcategories depending upon the length of time elapsed since the move, 0-5 years, 6-35 years, or over 35 years.

This division is an important one. The income differential attributable to South-North migration is not significantly different from zero during the first five years, but is over $1000 per year during the next thirty years. Similarly, the income differential attributable to migration from rural areas to small cities is virtually zero for the first five years and over $500 per year for the next thirty. For migrants from rural areas to medium cities, the differential is about the same for the first two periods, but the standard error of the coefficient for the first five years is large enough to make the coefficient insignificant at the .10 level. Migration to

41. Gary Becker, *Human Capital* (New York, 1964), p. 94.

large cities follows the same pattern—virtually no differential during the first five years, nearly $1400 per year thereafter.

Migration to very large cities is somewhat of an exception to the above pattern. There is a $600 per year differential for the first five years and a $1675 per year differential for the next thirty. Even in this case, the differential is much larger in the latter period, even though there is a significant differential for the first five years.

There are several exceptions to the rule of no differential during the first five years. The most interesting exception is revealed by the interaction between South-North migration and race during the first five years. This interaction implies a differential of over $800 per year for nonwhites moving out of the South. Another exception is South-North migrants with at least one year of college. They earn a differential of over $3000 per year during the first five years. On the other hand, the well-educated migrants from rural areas to medium-sized cities sustain a loss of over $3000 per year during the first five years. (This figure, rather difficult to believe, will be discussed further in the next chapter.)

In any event, we find support for the hypothesis that the migrant undergoes an adjustment period after migrating and does not begin earning a significant differential until several years have passed following migration.

We also find further support for the hypothesis that the rural-urban differential varies directly with city size. The differential earned 6-35 years after migrating ranges from $550 for small cities, $750 for medium cities, $1,375 for large cities, and $1,675 for very large cities. One exception to this finding results from a negative interaction between rural-very large city migration and race. This results in a differential of less than $1000 for nonwhites moving to very large cities.

Calculation of the Return

The return to migration[42] implied by each set of differentials given in Table 7 is shown in Table 8. The latter table shows the

42. If moving were costless.

present value of the earnings difference stream of a male migrant moving at age 20 and ceasing to earn income at age 65. The significant racial difference, with exceptional gains for nonwhites, are shown, under the headings South-North and Rural-Very Large.

It is clear from these calculations that the return to migration is quite substantial for most categories of migrants.

The present value of calculation in Table 9 when compared with Table 8 demonstrates the far greater return that accrues to migrants who move at the earliest opportunity. In Table 9 the present value, calculated at age 20, of the income difference stream of male migrants, moving at age 30, is given. The return is reduced by greater than 50%. The point is that anyone who at age 20 is trying to decide when to move, has a strong incentive to move immediately. In the face of this situation, those who decide not to move, presumably have decided that moving was not profitable for them (economically, psychologically, or both) and probably reach this same conclusion later. Some, of course, may see migration as profitable yet be unable to move. If migration is profitable at all, it is more profitable sooner than later.

An Adjustment for Differences in the Cost of Living

The purposes of this section are (1) to present the arguments for and against making a cost-of-living adjustment and (2) to make a crude adjustment using the Bureau of Labor Statistics report, "Three Standards of Living for an Urban Family of Four Persons."[43]

The Arguments For and Against a Cost-of-Living Adjustment to the Return to Migration

The argument in favor of a cost-of-living adjustment can be stated simply. If a migrant cannot purchase at his destination, with his pre-migration income, a basket of goods and services worth to him

43. U.S. Department of Labor, BLS, Bulletin No. 1570-5 (1969).

Table 8. Present Value of Income Difference Stream of Male Migrant Moving at Age 20, Using a 10 Percent Rate of Discount[a]

(Significant racial differentials are noted in four instances)

Education	Migration Category						
	South-North		Rural-Small	Rural-Medium	Rural-Large	Rural-Very Large	
	White	Nonwhite				White	Nonwhite
0 - 12 years	$ 6,535	$ 9,860	$3,660	$ 5,075	$ 9,135	$12,490	$8,330
Over 12 years	27,110	30,435	3,660	-11,840	19,475	9,980	5,825

[a]In line with a conservative approach towards evaluating benefits, we have chosen the relatively high rate of discount—10 percent.

Source: Table 7.

Table 9. Present Value of Income Differential Stream of Male Migrant Moving at Age 30, Calculated at Age 20 Using 10 Percent Rate of Discount

Education	South-North		Rural-Small	Rural-Medium	Rural-Large	Rural-Very Large	
	White	Nonwhite				White	Nonwhite
0 - 12 years	$2,270	$ 3,810	$1,275	$ 1,870	$3,245	$5,095	$3,370
Over 12 years	9,170	10,710	1,275	-4,650	7,510	4,130	2,405

as much or more as the basket he could have purchased at the origin with the same income, the increase in dollar income which he gets as a result of moving overstates the benefit which he derives from the move. If he could have purchased at the destination a basket worth more to him than a basket purchased at the origin with the same income, the benefit is understated.

In theory it is easy to construct an index number to deflate the income earned in the destination, assuming a higher cost of living there. One totals the cost (C_O) of the goods and services he would have consumed at the origin, totals the cost (C_D) of the cheapest basket of goods and services in the destination yielding the same total utility to the migrant, computes the ratio of the cost $\left(\frac{C_O}{C_D}\right)$, and multiplies the income at the destination by the ratio. This procedure has the usual index number problems but is probably quite satisfactory. One could equally well total the cost (C'_D) of the goods and services actually consumed at the destination, total the cost (C'_O) of the cheapest basket of goods and services at the origin yielding the same utility to the migrant, and compute the ratio of the costs $\left(\frac{C'_O}{C'_D}\right)$. (These two indices are equivalent to the Paasche and Lespeyres indices used in time-series cost-of-living indices.)

In practice, this procedure cannot be followed. To begin with, instead of pricing baskets of goods and services yielding constant utility from place to place, BLS prices the same basket in every location.[44] This procedure ignores the possibility that differing tastes[45] (from place to place) and differing prices (from place to place) are likely to lead to different consumption patterns from place to place, and consequently probably baises cost-of-living differences. (The direction of bias is not clear.)

One exception to the uniform basket procedure is locally provided public services paid for out of general revenues. These

44. Actually they price three baskets—high, medium and low in cost.

45. "Tastes," in this case, should be broadly enough defined to include items like transportation to and from work and occupational expenses (e.g. uniforms).

services are excluded from the basket, while state and local taxes (the chief source of revenue for these services) are *included* as part of the cost of living. This means that localities spending large sums of money per capita for services like public schools, fires, and police, will have, other things being equal, higher computed costs of living than places spending smaller sums for these purposes. But if the level of services received is also higher and the individual derives some benefit from incremental services, the computation tends to overstate cost-of-living differences.

Furthermore, the baskets used are not based consistently on actual consumption, but sometimes reflect the judgments of experts about what *ought* to be consumed. For example, "A standard of health, based on the recent findings of the U.S. Public Health Service on the ill effects of cigarette smoking . . . was invoked as a basis for eliminating an allowance for cigarettes from all three budgets."[46] In three areas of consumption—food, housing, and health—the standards of experts were used rather than actual consumption patterns. Since families tend to spend more on housing and less on food and medical care than experts think they ought to spend,[47] cities in which housing is relatively cheap but food and medical care are relatively expensive will have their cost of living overstated by the BLS procedure.

The final problem with the BLS data is that they are applicable to urban areas only. Rural areas are omitted from the survey. This means that a possibly erroneous assumption—that the cost of living in small cities (under 50,000) is the same as in rural areas—was made in order to adjust the return to rural-urban migration.

One further difficulty results from the lack of geographic detail in the Survey of Economic Opportunity—the data source for the estimates of the return to migration. It is probably reasonable to assume that, *ceteris paribus*, migrants choose as destinations cities with low rather than high costs of living. Thus, it would be useful to be able to use the cost of living of the precise city to which a migrant moves rather than the average cost of living in a

46. "Three Standards of Living," p. 3.
47. *Ibid.*, p. 8.

whole group of cities of similar population. The SEO does not give the destination city except in a few cases (the largest SMSA's).

In summary, the deficiencies of relying on the BLS cost-of-living figures are severe. They most likely adjust the income differences attributable to migration in the right direction but may over-adjust. Consequently the adjusted estimates of the differences given later in this paper should probably be viewed as a lower bound, while the unadjusted figures can be viewed as an upper bound.

The Adjustment

Cost-of-living deflators are estimated in this section and applied to a sampling of the estimates of income differences attributable to migration.

The source data for the cost-of-living deflators is given in Table 10. The cities surveyed are grouped by population size. The nonmetropolitan cities (less than 50,000) are given in one aggregate figure by BLS and appear at the top of the table. The weighted average and the sum of the weights are given at the end of the listings for each group.

Deflators for the different city-size categories have been calculated by dividing the nonmetropolitan cost-of-living indices by the relevant indices for each of the city-size categories. (For example, the deflator for the low-cost budget in the 250,000-750,000 city-size category is 94/97 = .97.) The deflators for the North were computed in the same say. The entire list of deflators is given in Table 11.

The method used to adjust the estimate of the return was as follows:

(1) For each migrant subsample, defined by its education, age, race, sex, and migration status, the predicted income at the destination is computed from the regression equation ($Income_D$).

(2) This income is deflated using the appropriate deflators from Table 11. (For example, if the destination is a northern, large city and the predicted income lies closest to the high-cost budget,

Table 10. Cost of Living Indices for Selected Locations

City		Low	Medium	High	Weight
Non Metropolitan		94	92	89	18.30
Under 250,000	Portland	101	101	97	.68
	Cedar Rapids	104	103	102	1.26
	Champaign, Urbana	106	102	101	2.26
	Green Bay	97	99	99	.57
	Durham	94	95	95	1.17
Less than 250,000	Average	102	100	99	5.94
250,000-750,000	Hartford	109	108	106	.68
	Lancaster	98	99	97	1.76
	Dayton	98	95	95	1.70
	Wichita	101	98	97	1.14
	Baton Rouge	91	92	95	1.32
	Nashville	93	93	92	1.34
	Orlando	92	91	92	2.30
	Bakersfield	98	97	97	2.26
	Honolulu	122	120	123	.41
250,000-750,000	Average	97	96	96	12.91
Over 750,000	Boston	106	110	112	2.54
	Buffalo	103	106	105	2.45
	N.Y.-N.E.N.J.	102	110	114	13.10
	Philadelphia	100	100	101	4.35
	Pittsburgh	99	97	96	1.65
	Chicago	103	103	102	6.98
	Cincinnati	96	97	94	.63
	Cleveland	100	102	100	1.85
	Detroit	99	99	99	3.13
	Indianapolis	104	102	100	.86
	Kansas City	101	99	98	.77
	Milwaukee	103	105	104	1.26
	Minneapolis	102	104	102	.91
	St. Louis	101	101	98	1.33
	Atlanta	95	92	91	1.64
	Baltimore	98	96	98	1.59
	Dallas	95	92	93	2.64

Table 10 Continued

City		Low	Medium	High	Weight
Over 750,000	Houston	94	91	91	.76
	Washington	104	102	103	1.28
	Denver	100	100	100	1.31
	Los Angeles	107	103	105	5.20
	San Diego	101	101	103	2.37
	San Francisco	111	108	108	2.26
	Seattle	110	105	103	1.99
Over 750,000	Average	102	103	104	62.85

Source: "Three Standards of Living for an Urban Family of Four Persons," Department of Labor, Bureau of Labor Statistics, Bulletin No. 1570-5 (1969), Tables 2-4 (pp. 33-37) and Table C-1 (p. 89).

the deflator is (.92 × .87) = .80).[48] The result is adjusted income at the destination (Adj. Income_D).

(3) The predicted income for the relevant stayer group (that is, stayers at the point of origin of the migrants matched by education, age, race and sex) is also computed from the regression equation (Income_0).

(4) This income is also deflated yielding adjusted income at the origin (Adj. Income_0).

The differences between the unadjusted incomes are the same as the income differentials calculated in the regression equations. The difference between the adjusted income at the origin and destination can be defined as the adjusted return to migration.

48. This procedure may result in overstating of differences since southern cities are more likely to be smaller cities. Unfortunately, there are not enough southern cities in each size category to construct separate city-size indices by region, and it seemed preferable to compute the combined effects of regional and city size deflators rather than ignoring one or the other.

Table 11. Cost-of-Living Deflators

I. Low Income	
North	.90
South	1.00 (by definition)
Small City	1.00 (by definition)
Medium City	.92
Large City	.97
Very Large City	.92
Medium, Large, Very Large (aggregated)	.93
II. Medium Income	
North	.89
South	1.00 (by definition)
Small City	1.00
Medium City	.92
Large City	.95
Very Large City	.89
Medium, Large, Very Large (aggregated)	.90
III. High Income	
North	.87
South	1.00 (by definition)
Small City	1.00
Medium City	.90
Large City	.92
Very Large City	.86
Medium, Large, Very Large (aggregated)	.87

Note: Small City = Under 50,000
Medium City = 50,000 - 250,000
Large City = 250,000 - 750,000
Very Large City = Over 750,000

Table 12. Annual Earnings Differences Attributable to Migration from the Rural South to the Urban North for Migrants Aged 21-30 for Selected Education and City-Size Categories, by Race and Sex

Years of Education	Unadj. Difference	Difference Unadj. $Income_0$	Adj. Difference	Adj. Difference Adj. $Income_0$ Rural-Small Cities
		Rural-Small Cities		
White Male				
5-8 years	$ 757	.23	$ 349	.11
12	757	.14	132	.02
⩾ 16	3294	.44	2116	.29
White Female				
5-8 years	757	1.71	637	1.44
12	757	.29	420	.16
⩾ 16	3294	.73	2432	.54
Black Male				
5-8 years	757	.27	404	.15
12	757	.18	266	.06
⩾ 16	3294	.68	2399	.50
Black Female				
5-8 years	757	a	691	a
12	757	.58	551	.42
⩾ 16	3294	1.68	2716	1.38
		Rural-Very Large Cities		
White Male				
5-8 years	1399	.42	597	.18
12	1399	.25	228	.04
⩾ 16	2885	.39	722	.10
White Female				
5-8 years	1399	3.17	1086	2.50
12	1399	.54	717	.27
⩾ 16	2885	.64	1623	.36

Table 12 Continued

Years of Education	Adj. Difference	Unadj. Difference	Unadj. Difference Income$_0$	Adj. Difference Adj. Income$_0$ Rural-Small Cities
Black Male				
5-8 years	1399	.50	689	.25
12	1399	.34	455	.11
⩾ 16	2885	.60	1263	.26
Black Female				
5-8 years	1399	a	1178	a
12	1399	1.10	944	.74
⩾ 16	2885	1.47	2061	1.05

[a]Predicted income at origin less than zero.

A sampling of differences, adjusted and unadjusted, is given in Table 12. (A complete list would not be feasible because there would be a separate adjustment for each education-age-sex-race-migration category.)[49]

The most important conclusion to be drawn from these adjusted figures is that, even after a possibly exaggerated adjustment, *the income difference attributable to migration remains positive for all the selected population categories and remains very large for many categories.* The very large differentials are most notable for migrants who start out with low incomes.

49. This amounts to thousands of adjustments.

5 Interpretation and Policy Implications

Summary and Interpretation of Results

The research reported on in the preceding chapters provides support for the hypothesis that there are substantial economic gains to be had by moving out of the South and by moving from rural areas into cities.

Migration out of the South yields an earnings difference of about $800 per year for most migrants. The two major exceptions to this figure are the college-educated, who earn a difference of nearly $3,100 per year, and women (either unrelated individuals or heads of families), who earn no additional income. The difference of $800 disaggregates to no gain for the first five years after migrating, $1,000 per year for the next thirty years, and about $350 per year thereafter. The annual return to migration for migrating out of the South at age 20 is, therefore, approximately $6,500, using a 10 percent rate of discount.

Migration from rural areas into urban areas yields an earnings difference ranging from about $600 per year for cities with a population of less than 250,000 to nearly $1,100 per year for cities with a population over 250,000. The college-educated are significant exceptions to the general gain of rural migrants to smaller cities. For them, there is an expected loss of over $1,000 per year. Women, again, earn no additional income by migrating. Disaggregating to four city-size categories and three lengths of time after moving shows that there is no gain for the first five years after migrating in all city-size categories, except for cities larger than 750,000. For the latter category of cities there is a

$600 per year gain during the first five years. During the next thirty years the annual earnings difference ranges from about $550 per year for cities smaller than 50,000, $750 per year for cities between 50,000 and 250,000, $1,375 per year for cities between 250,000 and 750,000, to $1,675 per year for cities over 750,000. After thirty-five years have elapsed, the differences are $825, $950, $1,225 and $825, respectively. Therefore, the return to migration for most migrants from rural areas to urban areas ranges from $3,650 for small cities, $5,075 for medium cities, $9,125 for large cities, to $12,500 for very large cities, using a 10 percent rate of discount.

Another finding is that, five years after moving, the migrants have earnings equal to those of the Northern and urban nonmovers of the same education, age, race and sex. These two facts throw light on two strongly held yet conflicting opinions about migrants. The first is the notion that the economic benefits derived from migration tend to be overstated because the differential actually reflects the higher level of intelligence and ambition of migrants as compared with nonmovers. The second is the view that Southern and rural in-migrants experience severe problems of adjusting to Northern and city life. That there are migrants who fit both categories—the exceptional people and the problem cases—is undoubtedly true, but clearly most migrants may not simultaneously be classified both ways, and the findings of this research indicate that migrants do not constitute the serious problem that many people believe them to be.

The relation between the return to migration and education is not clear-cut. The return for college-educated migrants moving out of the South ($27,000) is significantly larger than the return for others. However, negative interaction terms in some instances result in smaller returns for the college-educated moving from rural areas to cities. The most dramatic example is the estimated return of -$11,840 for moving from a rural area to a medium-sized city.[50] In two other circumstances, the earnings differentials

50. There is no satisfactory explanation for this striking figure. Perhaps there is an error in coding or an error on the computer tape which is so

of the less-educated are significant while those of the college-educated are insignificant. This analysis, therefore, neither confirms nor rejects the hypothesis that the return to migration is larger for the well-educated, but shows a mixed picture.

To the extent that a young person considers the economic advantages of migration and correctly determines what specific move would be profitable to him, he has a strong incentive to migrate sooner rather than later. The average annual return to migrating at age 30 is less than half the return of migrating at age 20 (when the calculations are performed at age 20 using a 10 percent rate of discount). This may be one explanation of why migration rates decline rapidly with age.

Earnings differences attributable to migration varied according to race in some instances. For Negroes, the earnings difference attributable to migration out of the South was $800 per year during the first five years after their move, while the difference for whites during that period was insignificant. This results in a return to South-North migration of nearly $10,000 for nonwhites with a high school education or less, while the return for comparably educated whites is only $6,500. The conclusion is that South-to-North migration clearly is more profitable for nonwhites than for whites.

Another interesting finding about migration and race concerns the return to migration to very large cities. For whites with a high-school education or less, the return to migration increases with each of four sizes of the destination city. For nonwhites this holds only for the first three sizes of cities. Very large cities yield a return somewhat smaller than large cities. There is no certain explanation for this, although two possible explanations may be advanced. One is that labor market conditions in the very large cities operate in such a way as to discriminate more against non-

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egregious that it swamps the other observations on rural-medium sized city, college-educated movers. Perhaps there were a few people in that category who lost extraordinarily large sums of money in a business venture. Perhaps college-educated people who move to medium-sized cities really do lose money. Unfortunately, there is no way to be sure from the character of the data used.

white migrants. For example, union seniority rules may be enforced more rigidly against nonwhites. Another possibility is that, because most rural nonwhites are more likely to have friends and relatives in the large cities than in the other size categories of cities, a greater percentage of the migrants attracted to the very large cities are more marginal—partially depending upon the resources of an extended family. It is emphasized that these are conjectures.

The lack of a return to migration for women who are heads of families and for unrelated females is consistent with the hypothesis advanced in Chapter 2 that women may have less incentive to work in Northern cities. This does not necessarily confirm the notion that many women move North to obtain higher welfare payments. Another distinct possibility is that women who move to a region having a higher wage level may work fewer hours or remove themselves from the labor force more frequently than they could have afforded in the rural South—using their economic advantage not to accumulate higher annual wages but to devote more time to family duties. The data used do not give insights into the reasons. Neither do the data indicate how many of these women were heads of families when they moved, although this fact could be of some help in evaluating the supposed attractiveness of higher welfare payments as an incentive to migrate since unrelated females are not eligible for the AFDC program.

Problems with the Analysis

Two serious problems with the analysis may be related. The first problem, discussed earlier in this chapter, concerns whether variables necessarily omitted from the regression equations were positively correlated with both earnings and migrant status. The second problem concerns the persistently negative coefficients for North-South migration.

Essentially, the problem of omitted variables is that it is impossible to adjust for all personal characteristics which may influence income. The proportion of variance explained by the variables in all of the regression equations is less than 50. If any personal qualities not included in the equation—such as ambition,

intelligence or knowledge—are more characteristic of migrants than nonmigrants and are correlated positively with income, some of the variation in earnings, attributed by the equations in this research to migration, may in fact be attributable in large measure to ambition, intelligence or knowledge.

One possible explanation for the negative return estimated for North-South migration is that North-South migrants are less intelligent, ambitious or knowledgeable than Northern non-movers. This explanation becomes more reasonable if one considers that many North-South movers may be former South-North movers who have not been successful in the North. If this is true, then the South-North mover sub-sample is possibly a biased sample of all South-North movers, since those movers who have done the least well have returned South and have thus become North-South movers.

In summary, the two most serious problems with the analysis are a possible upward bias in the estimate of the return to South-North migration and a corresponding downward bias in the return to North-South migration.

Policy Implications

Although a final judgment about the benefits and costs of migration to the individual and to society cannot be made on the basis of this paper, there is a major conclusion which has important policy implications. From the point of view of the migrant, migration has been overrated as a problem. Even from the point of view of the receiving areas, many assessments seem to have exaggerated the problem. Migration to the cities and out of the South is not significant enough nor are migrants' income experiences different enough from their urban and Northern counterparts to warrant the considerable alarm the migration issue stimulates. The most important policy implication of this is that programs to stem migration to the cities are not likely to have much impact on city problems.

Furthermore, if one is willing to accept the return figures calculated in this research effort—at least as representing orders of magnitude that conform to actual experience—there are important

implications about the cost to government of stemming migration. This cost would appear to be very high, particularly on a "per migrant" basis. It may be assumed that the prospective migrant would not be discouraged from leaving unless he could receive a substantial fraction of the economic benefits to be derived from migration in his place of origin without moving. Providing such benefits would require massive government expenditures, whether in the form of direct subsidies, subsidies to business and agriculture, or other programs to bolster local economies.

Finally, the findings are consistent with the well known fact that migrants out of an area tend to be drawn from the best qualified and most productive people. The rural areas of the South lose a substantial investment they have made in human capital when migrants leave. If programs to halt migration to the cities are rejected, the problem of what happens to depressed rural areas remains. Subsidies to cover moving expenses and counseling are possible alternatives for those who wish to leave but either cannot afford to or are unable to make an intelligent choice. Income maintenance programs may help those who choose to stay behind but who must endure unemployment or underemployment. These potential policies deserve consideration along with stemming outmigration through economic development as solutions to the problem of depressed rural areas.

Additional work will have to be done in order to fully evaluate the social benefits and costs of migration. However, it seems clear that the private return to migration for many important categories of migrants is substantial.

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